



Deutsche  
Akkreditierungsstelle  
D-PL-12053-01-01

**Annex acc. to FCC Title 47 CFR Part 15  
relating to  
WERMA Signaltechnik GmbH + Co. KG  
WIN1**

# **Annex no. 5 User Manual**

**Title 47 - Telecommunication  
Part 15 - Radio Frequency Devices  
Subpart C – Intentional Radiators  
Measurement Procedure: ANSI C63.4-2009**

Reference Test report no. 15009809

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EUT: WIN1

FCC ID: ZGHWIN1

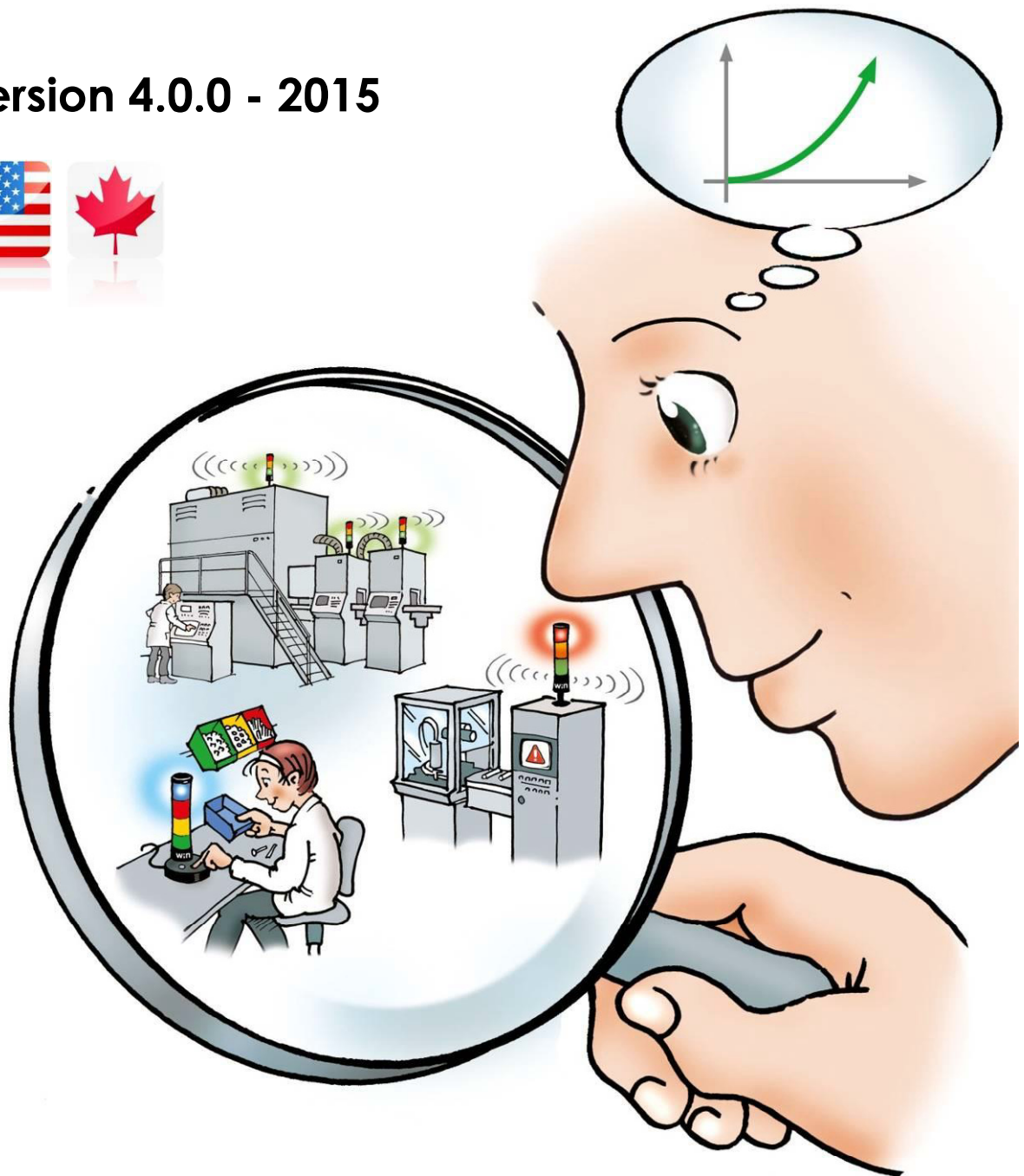
FCC Title 47 CFR Part 15 C

Date of issue: 2015-03-16

**User Manual**

# Manual for the MDC, Call for Action and Control System

Version 4.0.0 - 2015





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## Introduction

WERMA offers an easy to install simple low cost wireless monitoring system called WIN (Wireless Information Network) which can be fitted to virtually any piece of equipment or machinery, irrespective of age and specification. WIN combines signal tower technology with wireless technology and an ingenious software package. The common interface point on machines is a WERMA signal tower to which the WIN (MDC – machine data collection) system can be easily fitted and commissioned.

The software supplied with the system is license-free and easy to install. There is no restriction on the number of users who may wish to install and run the program. The software displays the status condition of signal lights installed in the system and the user can select from three languages, German, English or French. The software enables the user to analyze runtimes, identify causes of disruption in operations and therefore improve efficiency.

This manual is valid for the following products:

- 860.000.01
- 860.640.04
- 860.640.05
- 860.640.06
- 860.640.14
- 860.640.15
- 860.640.16
- 860.640.25
- 860.840.04
- 860.840.05
- 860.840.14
- 860.840.15
- 860.840.25

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As of:

Version 4.0.0 - 01/2015  
310.860.005

WERMA reserves the right to make technical improvements to the product and accepts no responsibility for mistakes or printing errors which may be contained in this documentation.

## 1. Technical information

### 1.1 Assembly

#### 1.1.1 WIN receiver (860.000.01)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall mounting accessories	860.000.01	1
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1

#### 1.1.2 WIN system KombiSIGN 71 (860.640.04)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall mounting accessories	860.000.01	1
WIN transmitter KombiSIGN 71	860.640.05	3
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1

#### 1.1.3 WIN transmitter KombiSIGN 71 (860.640.05)

Description	Order number	Quantity
WIN transmitter KombiSIGN 71	860.640.05	1
WIN leaflet instruction		1

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#### 1.1.4 WIN complete KombiSIGN 71 (860.640.06)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall mounting accessories	860.000.01	1
WIN transmitter KombiSIGN 71	860.640.05	3
LED permanent light element green 24V AC/DC	644.200.75	3
LED permanent light element yellow 24V AC/DC	644.300.75	3
LED permanent light element red 24V AC/DC	644.100.75	3
Base with integrated tube	975.840.10	3
Terminal element Cage Clamp for tube mounting	640.810.00	3
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1
KombiSIGN 71 leaflet instruction		1

#### 1.1.5 WIN system with WIN transmitter performance KombiSIGN 70 (860.840.14)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall-mounting accessories	860.000.01	1
WIN transmitter performance KombiSIGN 70	860.840.15	3
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1

#### 1.1.6 WIN transmitter performance KombiSIGN 71 (860.640.15)

Description	Order number	Quantity
WIN transmitter performance KombiSIGN 71	860.640.15	1
WIN leaflet instruction		1

### 1.1.7 WIN complete with WIN transmitter performance KombiSIGN 71 (860.640.16)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall mounting accessories	860.000.01	1
WIN transmitter performance KombiSIGN 71	860.640.15	3
LED permanent light element green 24V AC/DC	644.200.75	3
LED permanent light element yellow 24V AC/DC	644.300.75	3
LED permanent light element red 24V AC/DC	644.100.75	3
Base with integrated tube	975.840.10	3
Terminal element Cage Clamp for tube mounting	640.810.00	3
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1
KombiSIGN 71 leaflet instruction		1

### 1.1.8 WIN transmitter control KombiSIGN 71 (860.640.25)

Description	Order number	Quantity
WIN transmitter control KombiSIGN 71	860.640.25	1
WIN leaflet instruction		1

### 1.1.9 WIN system KombiSIGN 70 (860.840.04)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall-mounting accessories	860.000.01	1
WIN transmitter KombiSIGN 70	860.840.05	3
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1

### 1.1.10 WIN transmitter KombiSIGN 70 (860.840.05)

Description	Order number	Quantity
WIN transmitter KombiSIGN 70	860.840.05	1
WIN leaflet instruction		1

---

### 1.1.11 WIN system with WIN transmitter performance KombiSIGN 71 (860.640.14)

Description	Order number	Quantity
WIN receiver with antenna, rubber feet and wall mounting accessories	860.000.01	1
WIN transmitter performance KombiSIGN 71	860.640.14	3
USB cable 3m (A/Mini-B-USB)		1
USB cable 3m (A/Micro-USB)		1
Software DVD		1
WIN leaflet instruction		1

### 1.1.12 WIN transmitter performance KombiSIGN 70 (860.840.15)

Description	Order number	Quantity
WIN transmitter performance KombiSIGN 70	860.840.15	1
WIN leaflet instruction		1

### 1.1.13 WIN transmitter control KombiSIGN 70 (860.840.25)

Description	Order number	Quantity
WIN transmitter performance KombiSIGN 70	860.840.25	1
WIN leaflet instruction		1



## 1.2 System requirements

The system requirements are different depending on the type of PC.

On the "Server PC" Microsoft SQL Server 2008 R2 and the WIN software are installed. The WIN database runs on the "Server PC".

On the "Client PC" only the WIN software is installed. The SQL Server database with the WIN database will be connected over a network.

Description	Server PC	Client PC
Processor	Pentium III compatible processor or higher Dual Core - processor is recommended	
Minimum RAM	2 GB	1 GB
Free hard disk space	3,6 GB	1,5 GB
CD/DVD Drive	✓	
USB port	✓	
Windows Installer 4.5	✓	
Microsoft .NET Framework 4.0	✓ <i>Will be installed together with the WERMA WIN software if not available on your PC.</i>	
Supported Operating Systems	Windows XP SP3	Windows XP SP3
	Windows Vista SP2	Windows Vista SP2
	Windows 7 SP1	Windows 7 SP1
	Windows 8	Windows 8
	Windows 8.1	Windows 8.1
	Windows Server 2003 SP2	Windows Server 2003 SP2
	Windows Server 2003 R2	Windows Server 2003 R2
	Windows Server 2008 SP2	Windows Server 2008 SP2
	Windows Server 2008 R2 SP1	Windows Server 2008 R2 SP1
	Windows Server 2012	Windows Server 2012
	Windows Server 2012 R2	Windows Server 2012 R2

**Note:** Unless otherwise specified the 32 bit (x36) and 64 Bit (x64) are supported. The automatic installation of the database onto a domain controller is not supported. Manual installation is possible. The server core roll is not supported.

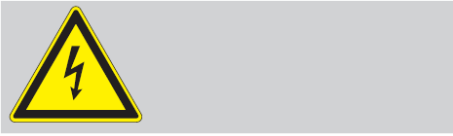
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## 1.3 Safety instructions

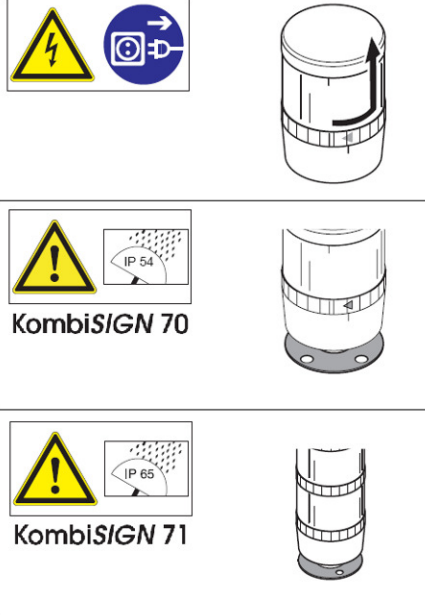


### Caution!

- The WIN device must not be used in connection with devices that may directly or indirectly serve health- or life-saving purposes or cause hazards by operation to human beings, animals or asset values.
- The described products have been developed in order to assume safety functions as part of an entire plant or machine. The responsibility taken by the manufacturer of a plant or machine implies a safeguarding of correct general function. Moreover WERMA does not assume any liability for recommendations made or implied by this description. From this description new claims for guarantee, warranty or liability cannot be derived beyond the general terms and conditions of delivery.
- This device does not replace personal protective equipment (e.g. safety glasses, feet protection, etc.).
- This system does not take the place or replace any machine guards, machine safety guards, safety devices, safety procedures, or supervision.
- Always test this device, as well as all machine guards and safeguards, to ensure they are functional at start-up of each shift.
- Always take machine out of service until worn out parts are replaced.
- Whenever removing guards always enforce OSHA lock-out / tag-out regulations.
- Please also refer to the instruction leaflet for your WERMA signal tower
- The WIN system is not suitable for safety relevant applications.
- For use with 24 V signal towers only.
- Use only with a class 2 power supply (Protective Extra Low Voltage).

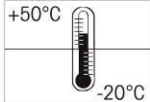


- (D) Anschluss **ausschließlich** durch ausgebildete Elektro-Fachkräfte.  
 (GB) Electrical connection is to be made by trained electrical specialists **only**.  
 (F) Le branchement doit **uniquement** être effectué par des professionnels.  
 (I) Il collegamento deve essere eseguito **solo** da elettricisti specializzati.  
 (E) La conexión **sólo** debe ser realizada por electricistas debidamente formados.  
 (PT) A ligação deve ser feita **exclusivamente** por profissional eléctrico especializado.  
 (CZ) Připojení smí **provádět** pouze kvalifikovaný personál.  
 (PL) Podłączenie **wyłącznie** przez specjalistów-elektryków.  
 (FI) Liittäminen kuuluu **ainoastaan** koulutettujen sähköalan ammattilaisten tehtäviin.  
 (RUS) Подключение проводится только специалистом-электриком.  
 (TR) Bağlantı **sadece** eğitimli elektrik teknisyenleri tarafından yapılmalıdır.  
 (CN) 布线需由专业电工执行




## 1.4 Technical data



### 1.4.1 General

Description	Value
ISM frequency	913 ... 917 MHz
Transmitter power	10dBm with 50 Ohm
Transmission range	Max. 300m (unobstructed line of sight) With Repeater function max. 900m (unobstructed line of sight)
Temperature	
Standards	<p><b>FCC:</b> This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Usually this is followed by the following FCC caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. Contains transmitter module FCC ID: ZGHWIN1</p> <p><b>IC:</b> This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Contains transmitter module IC: 9619A-WIN1</p>
Network size	Max. 50 WIN transmitter and max. 4 WIN receivers, which are writing to one database. Larger networks upon request.



### 1.4.2 WIN receiver

Description	Value
Dimension	80 mm x 76 mm x 31 mm
Interface	USB
Operating voltage	5V (USB)
Current consumption	Max. 100 mA
Material	ABS, black + transparent ring
Protection rating	

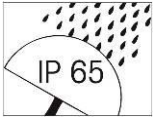

### 1.4.3 WIN transmitter

Description	Value
Dimension	Ø 70 mm x 65 mm
Current consumption	40 mA (max. 430 mA)
Operating voltage	24 V AC/DC
Material	PC, black
Seal	Pre-assembled with each element
Protection rating	KombiSIGN 71:  KombiSIGN 70: 
Installation position	Lowest element of your signal tower
Number of signal elements	5, incl. WIN transmitter element

### 1.4.4 WIN transmitter performance



Description	Value
Dimension	Ø 70 mm x 65 mm
Current consumption	40 mA (max. 430 mA)
Operating voltage	24 V AC/DC
Material	PC, black
Seal	Pre-assembled with each element
Protection rating	KombiSIGN 71:  KombiSIGN 70: 
Installation position	lowest element of your signal tower
Number of signal elements	Max. 4 (max. 3 tiers for status monitoring and max. 1 tier with counter input)
Counter impulse	Max. 10Hz under the following conditions: <ul style="list-style-type: none"> <li>• WIN software is running and the database is connected</li> <li>• WIN transmitter performance has a permanent power supply</li> <li>• Wireless connection between the units</li> </ul>
Counter input	Tier 4 (pre-assigned), can be changed in WIN software

### 1.4.5 WIN transmitter control

Description	Value
Dimension	Ø 70 mm x 65 mm
Current consumption	70 mA (max. 2 A)
Current per output	Continuous: 750 mA Peak (10 ms): 3,6 A Min.: 0,1 mA
Operating voltage	24 V AC/DC
Material	PC, black
Seal	Pre-assembled with each element
Protection rating	<p>KombiSIGN 71:</p>  <p>KombiSIGN 70:</p> 
Installation position	lowest element of your signal tower
Number of signal elements	5, incl. WIN transmitter element

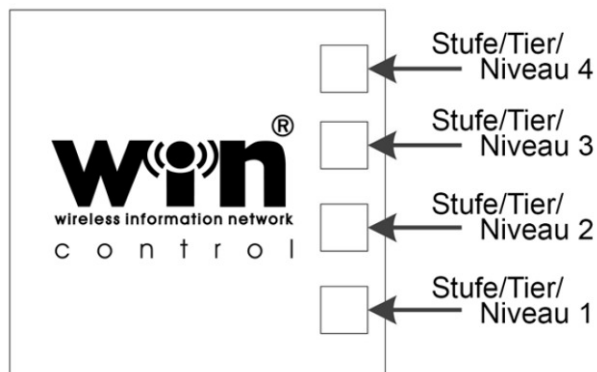
## 1.5 Troubleshooting

### 1.5.1 WIN transmitter / WIN transmitter performance / WIN transmitter control



Meaning	LED red	LED green
		
No connection with <b>WIN receiver</b>	X	
Connection with <b>WIN receiver</b>		X

### 1.5.2 WIN transmitter control

The blue status LEDs represent the current state of the individual output. These are only active if the external switch is activated.



### 1.5.3 WIN receiver

Meaning	LED red	LED green
		
No connection with <b>WIN transmitter</b>	X	
Connection with <b>WIN transmitter</b>		X

---

## 1.6 Power supply

### 1.6.1 WIN transmitter

**Note:** The WIN transmitter uses the electrical connections of the signal tower.

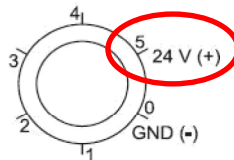
There are 2 options:

1. Passive power supply:

If at least one element of the signal tower is always active, the WIN transmitter does not need an additional power supply.

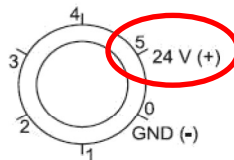
2. Active power supply (recommended):

If there is no passive power supply, the WIN transmitter needs a permanent operating voltage, which should be connected to pin 5, as shown in the diagram below (24V AC/DC).



### 1.6.2 WIN transmitter performance

The WIN transmitter performance needs a **permanent operating voltage**, which should be connected to pin 5, as shown in the diagram below (24V AC/DC).

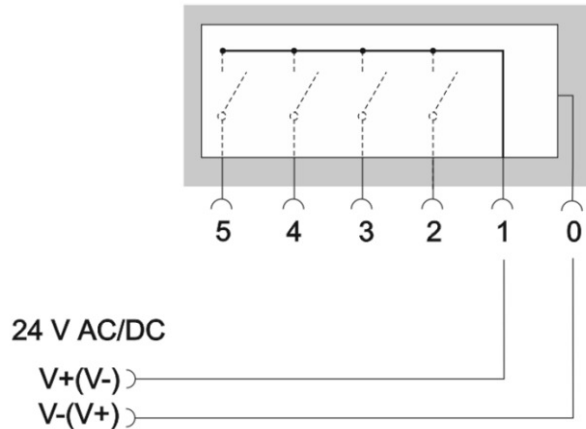




### 1.6.3 WIN transmitter control

The WIN transmitter control needs a **permanent operating voltage**, which should be connected to Pin 1, as shown in the diagram below (24 V AC/DC).

Pin 1 can be switched through to the terminals 2, 3, 4 and 5. Depending on the pin assignment of terminals 0 and 1 it is possible to switch to 24V or 0V (see drawing).



### 1.6.4 WIN receiver

The WIN receiver is powered through the USB port (5V DC) of your PC.



---

## 2. Installation of WIN Software

**Note:** You must have administrator rights to install the WIN software.

**Note:** Please note the System Requirements when installing the software, see chapter 1.2

During the installation you can select between "Install local database", "Connect with existing database" or "Expert Installation."

### 2.1 Install local database

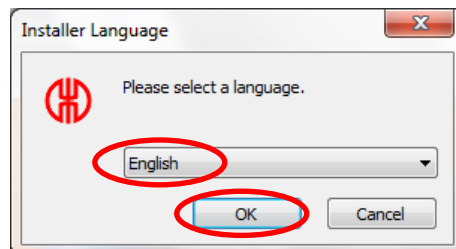
**Note:** For this type of installation WERMA WIN creates a User and an associated password for the WIN database access. These are:

**User: wermawin**

**Password: Tyz19\$lx50WsR3Ed7m**

**Note:** The DVD supplied with the WIN receiver is required to start the installation process.

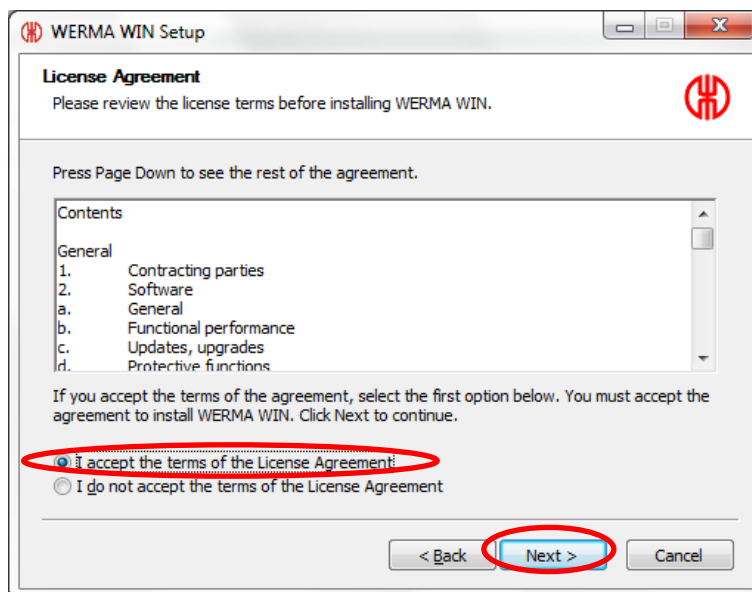
1. Insert the DVD into the CD-ROM drive of your PC. The installation wizard starts automatically. If the installation does not start automatically, you can manually start the installation process at **<CD drive>:\setup.exe**.
2. Follow the instructions until the installation has been completed.
3. Select your desired language and click "OK".



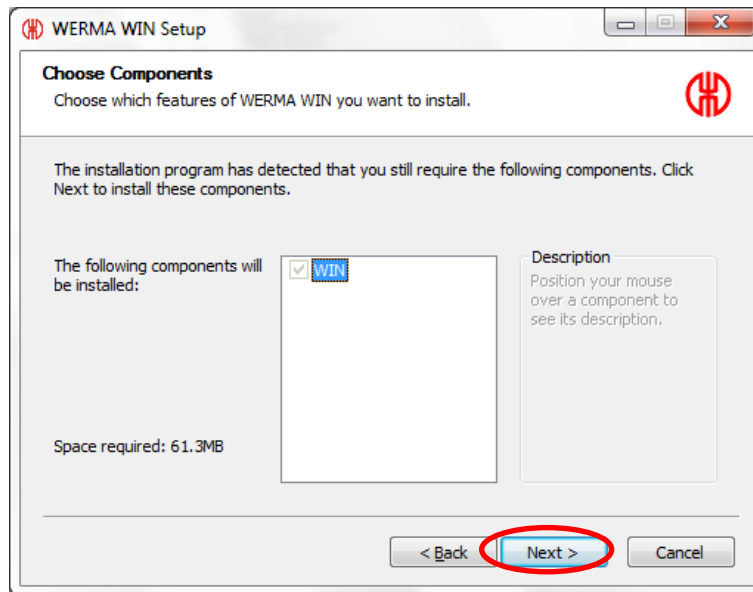
4. Click "Next".



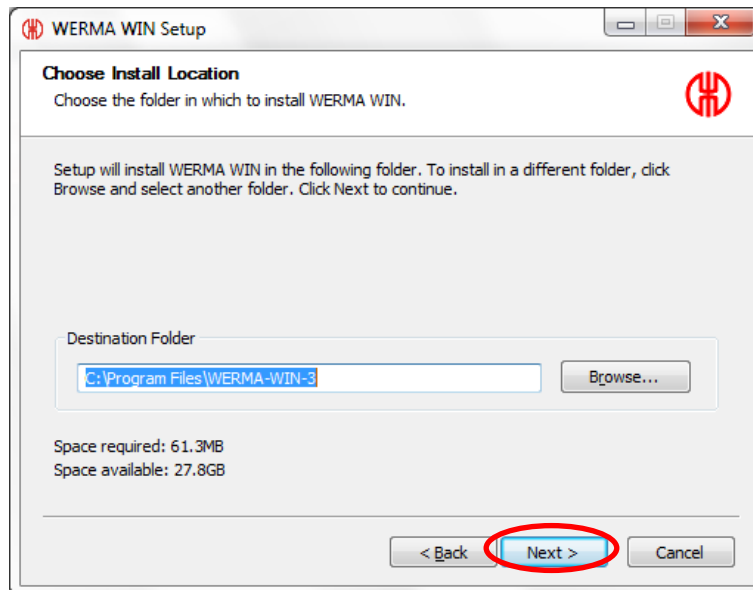
5. You have to accept the license agreement before starting the installation. Click "Next".



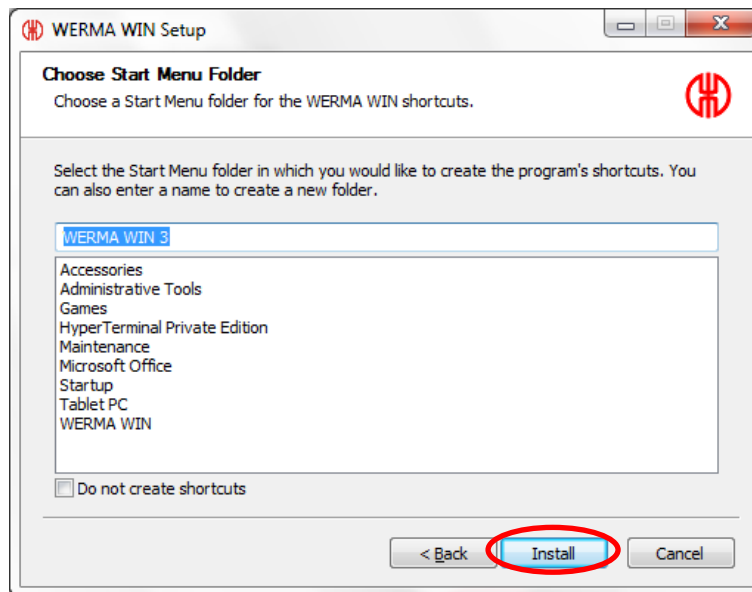
6. This window lists the components to be installed. If Microsoft .NET Framework or Windows Installer is not available on your PC, these programs will also be included in the list. Click "Next".



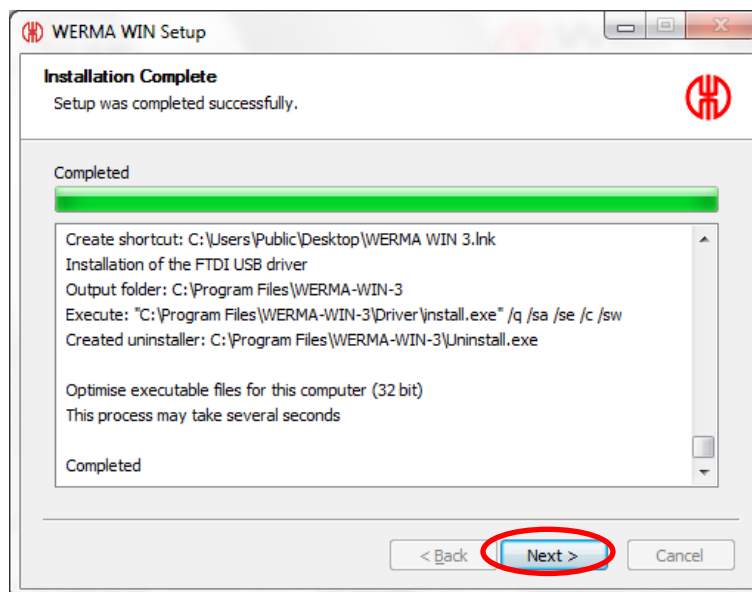
7. Specify the location where you wish to install the WIN software and click "Next".



8. Click "Install" to start the installation.

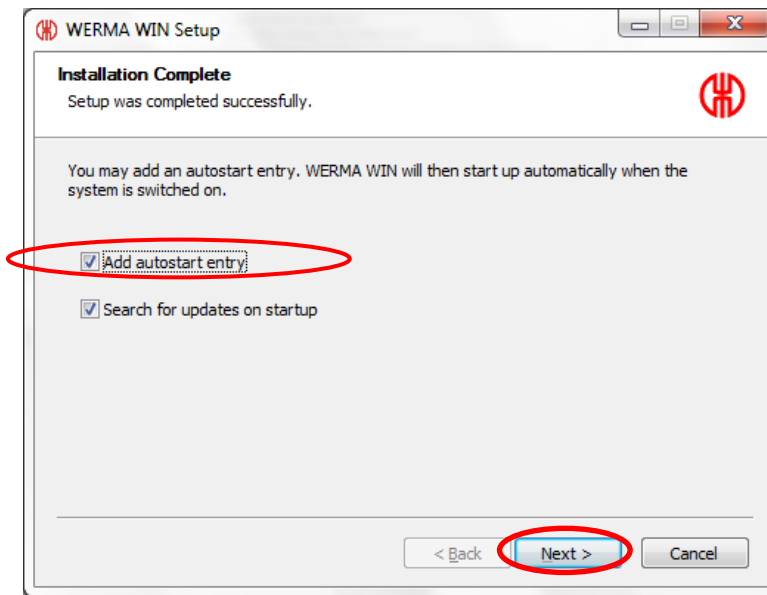


9. Software installation has been completed. Click "Next".

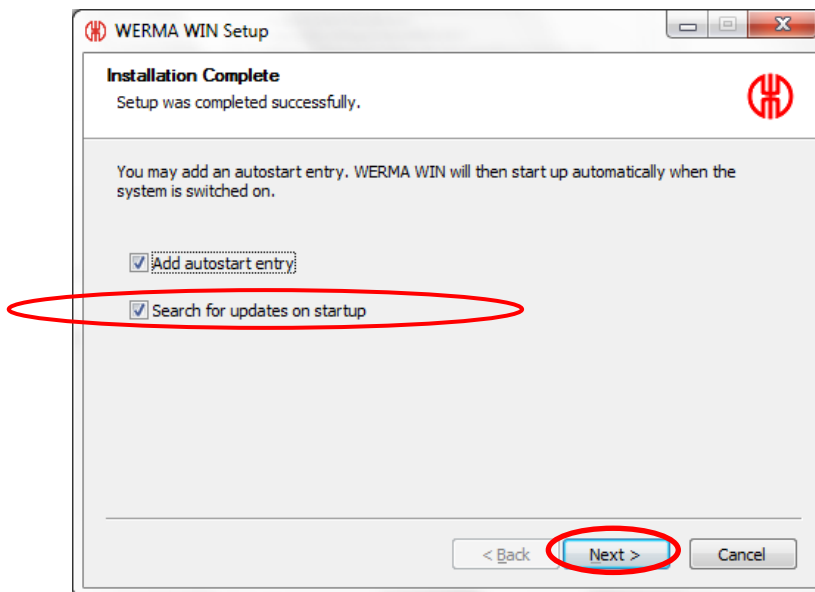


**Note:** If Microsoft .NET Framework has to be installed, the installation process may take several minutes and a restart is necessary.

- 
10. By adding an "Add autostart entry", the WIN software runs automatically every time your PC starts up and a user is logged in.



11. If you have selected the "search for updates on startup" box, WERMA WIN will search for and inform you of any updates every time it starts up.



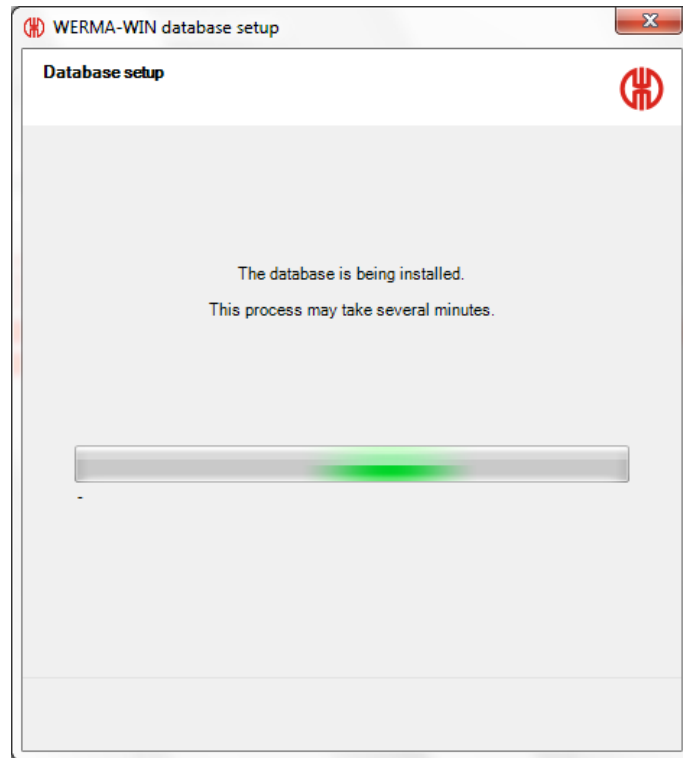
12. Click "Next".

13. The following window opens. Please select "Install database". The database set up installs Microsoft SQL Server 2008 R2 locally with a WIN database.



---

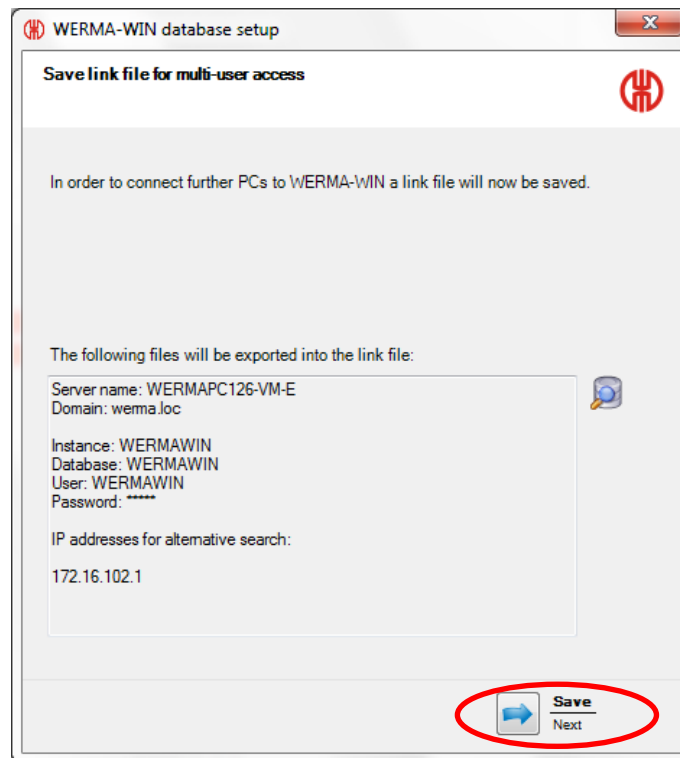
14. The following window opens. Please wait until the database set up is complete.



**Note:** During installation of the database a "WERMA WIN 4 Server service" and a "WERMA WIN 4 Connector service" is installed. The services run in the background as long as the PC is on. All collected WIN data is written to the WIN database without the WIN software running and a user logged on.

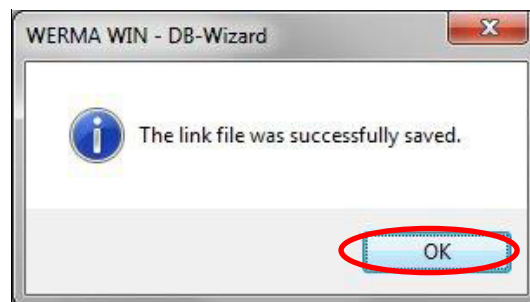


15. Save the link file, which is necessary for multiple accesses.



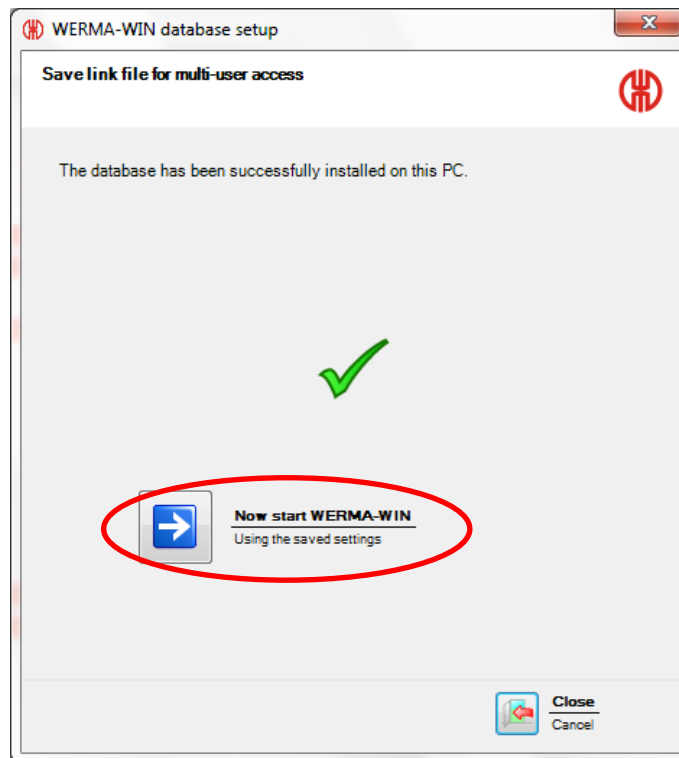
**Note:** Save the link file to a network location to which other users have access.

16. The following window appears when the link file is saved successfully.



---

17. The database has been successfully installed. You can now start WIN; the database set up will close automatically.

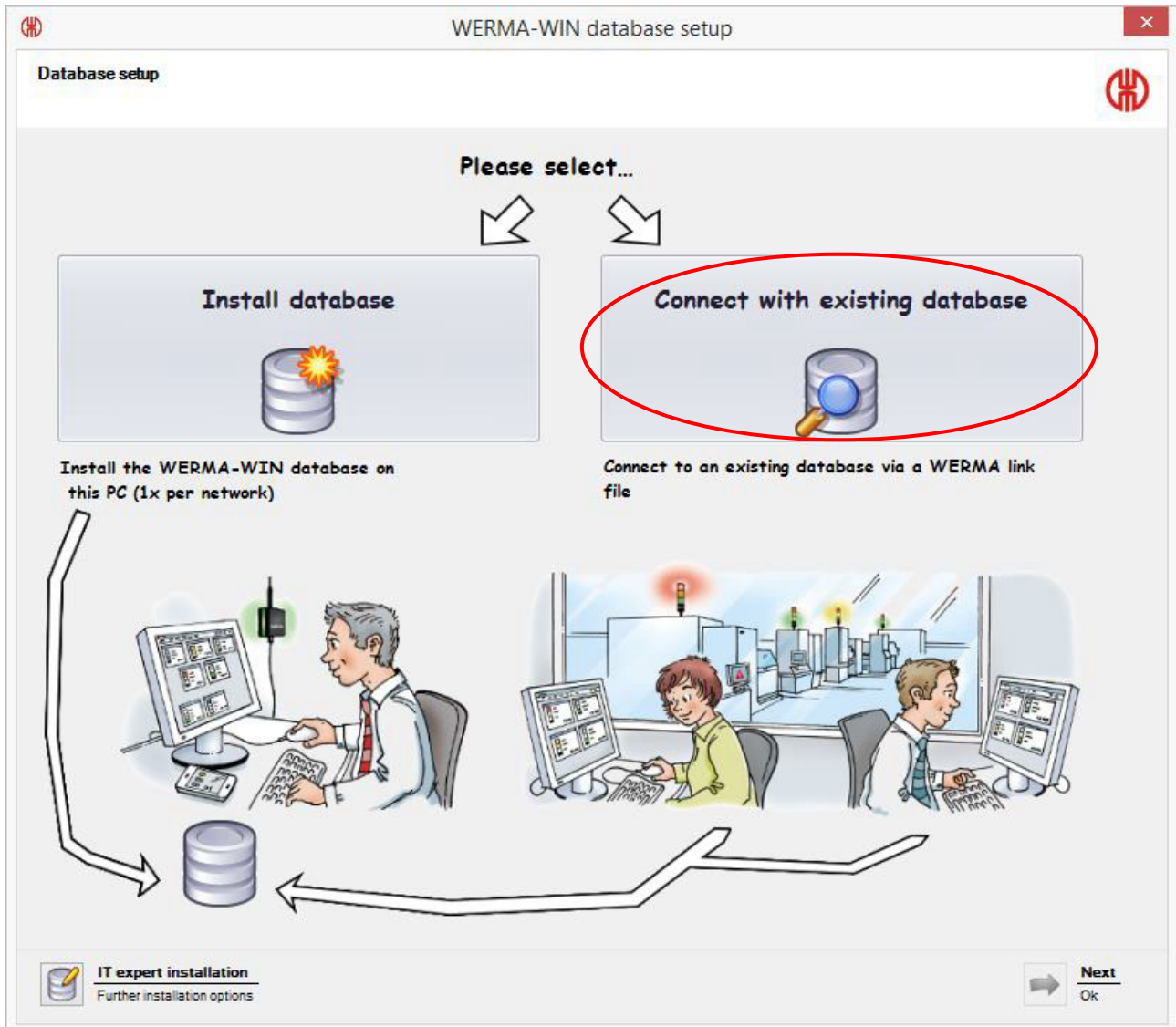


## 2.2 Connection to existing database

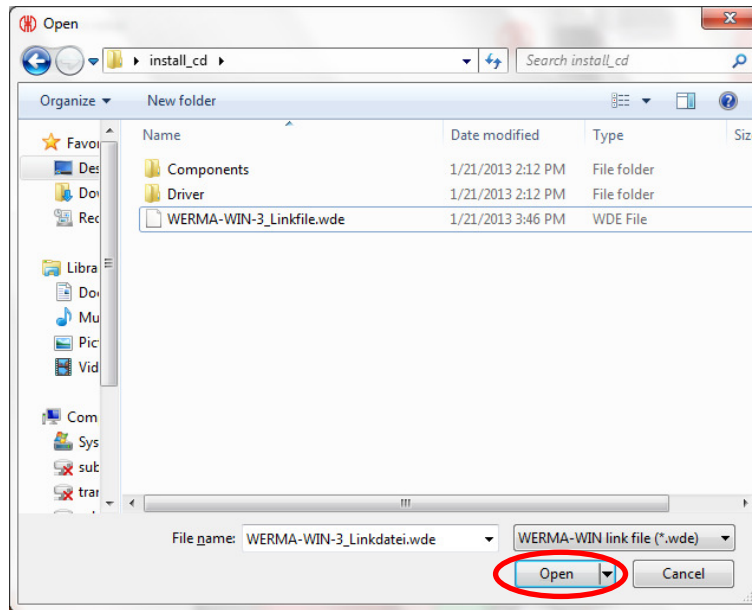
To connect to an existing database, proceed as described in chapter 2.1 up to and including point 12.

Proceed as follows:

1. The following window opens. Please select "Connect to existing database".

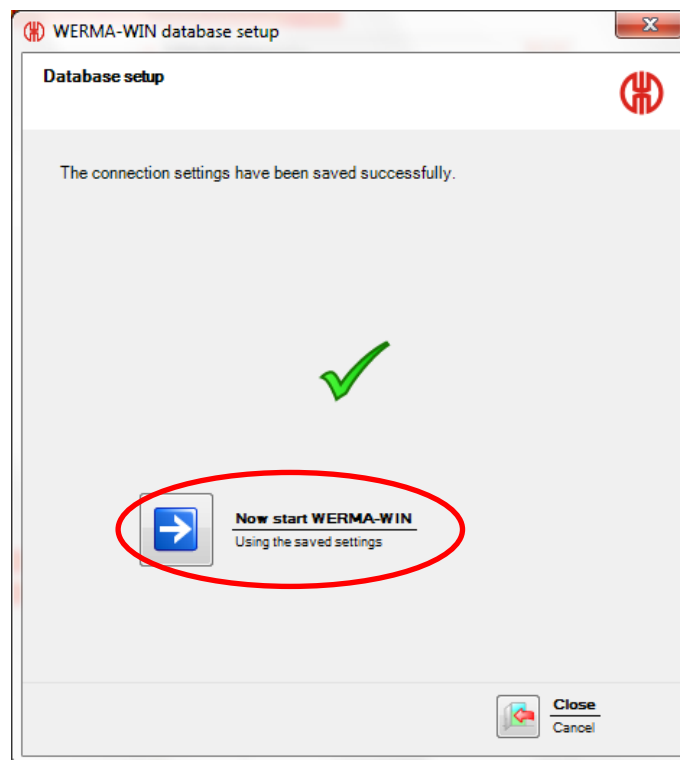


2. Select the location of the link file (network) and click "Open".



**Note:** A "WERMA WIN 4 Connector service" is installed when connected to the existing database. The service will run in the background as long as the PC is on. All collected WIN data is written to the WIN database without the WIN software running and a user logged on.

3. The connection to the database was successful. You can now start WIN the database set up will close automatically.



## 2.3 IT Expert Installation

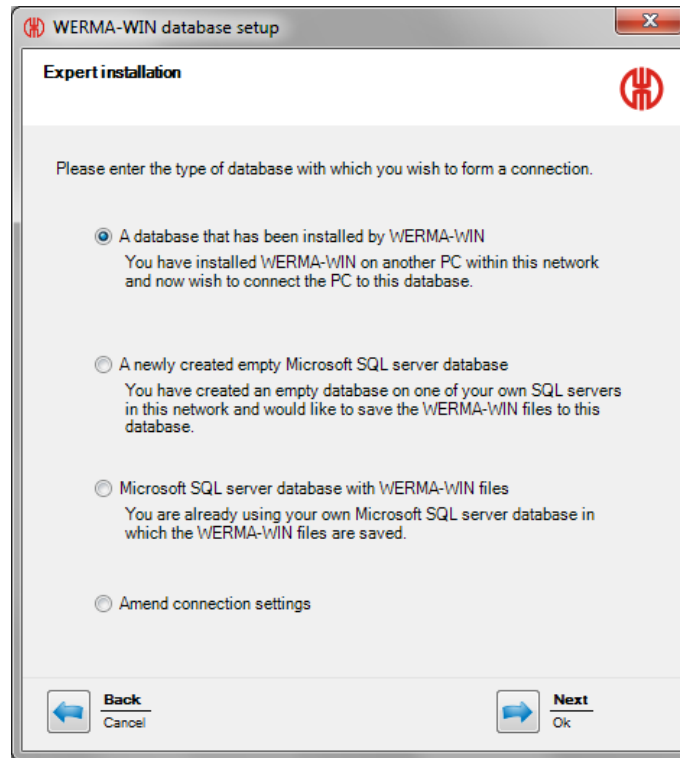
For Expert installation (further installation options), proceed as described in chapter 2.1 up to and including point 12.

Proceed as follows:

1. The following window opens. Please select "IT expert installation".



- 
2. The following window opens, you have several choices to connect to a database, see chapter 1 to 2.3.3

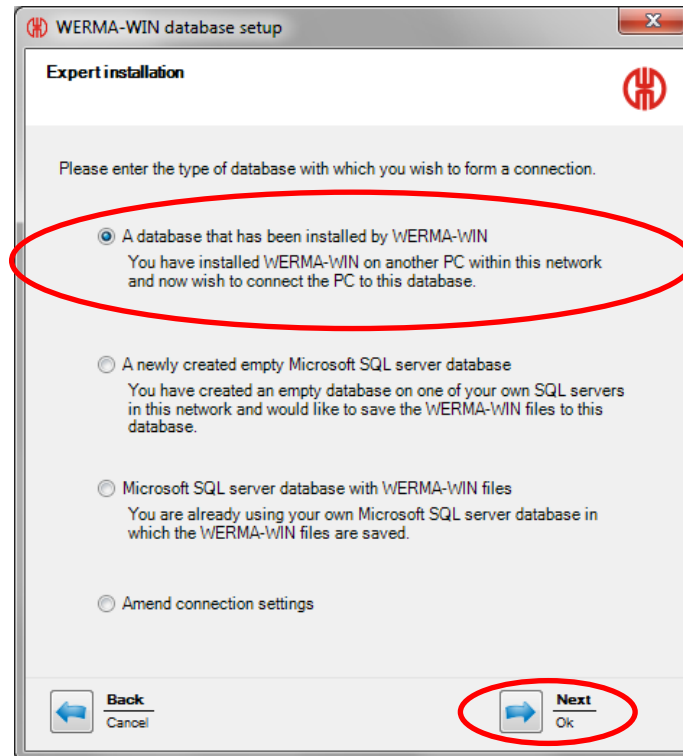


### 2.3.1 A database that has been installed by WERMA-WIN

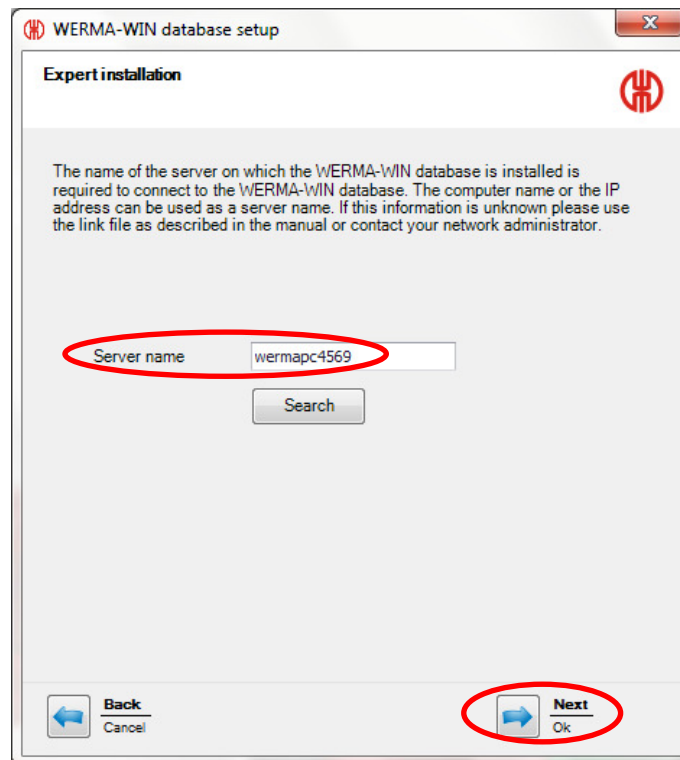
By selecting this, you can connect to an existing WIN database (see also chapter 2.2).

To connect to an existing database, proceed as follows:

1. Select "A database that has been installed by WERMA-WIN" and click "Next."



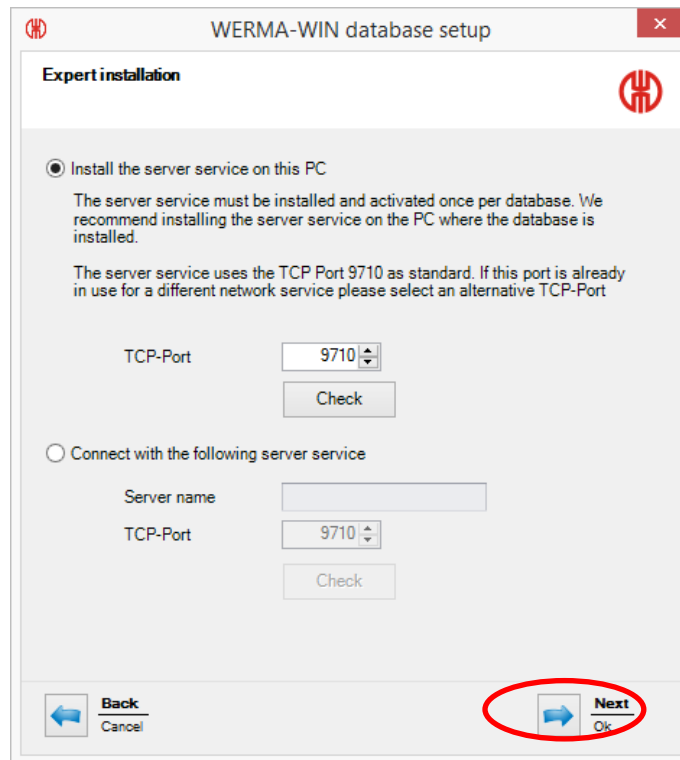
- 
- Specify the server name on which the database is installed.



**Note:** The server name can be found in the WERMA-WIN link file (.wde) that you saved in the first installation.

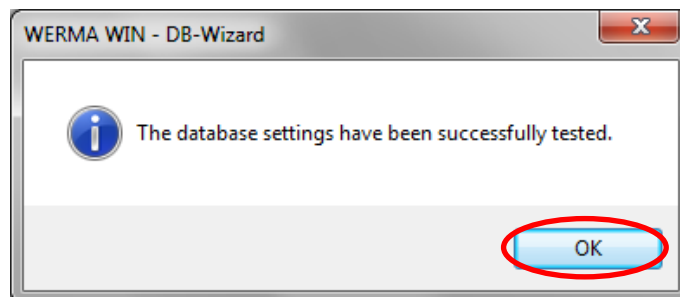


3. Please select if you wish to have the “WERMA WIN 4 server service” installed on your desktop. Alternatively you can connect to an existing server service, giving the server name and TCP port. Confirm your selection with “Next”.



**Note:** A “WERMA WIN 4 Connector service” will also be installed. The service will run in the background as long as the PC is on. All collected WIN data is written to the WIN database without the WIN software running and a user logged on.

4. If the connection to the database is successful, the following window appears. Click "OK".



---

### 2.3.2 A newly created empty Microsoft SQL server database

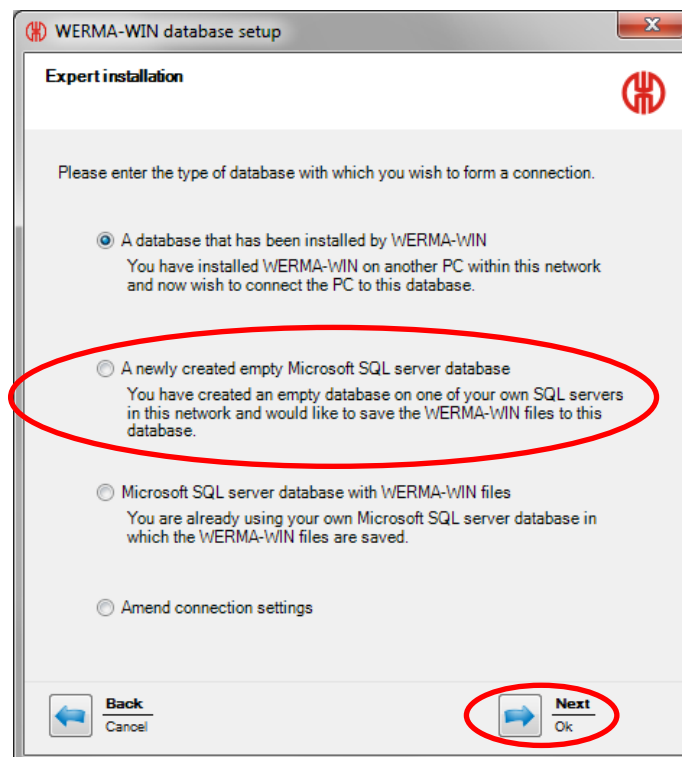
By selecting this option, you can connect to a new and empty database. The installation program will then create all necessary tables in the database.

**Note:** You have to create the empty database on the Microsoft SQL Server and link the corresponding database user with the database login. Please note:

Compatible from:	Microsoft SQL Server 2005 SP4
Recommendation:	Microsoft SQL Server 2008 R2
Collation:	Latin1_General_CI_AS
Role membership:	db_datareader, db_datawriter and db_ddladmin or db_owner

To connect to an empty database, proceed as follows:

1. Select "A newly created empty Microsoft SQL server database" and click "Next."



- Specify the access data for this new database.

WERMA-WIN database setup

**Expert installation**

Please enter the connection settings for the database server. Contact your network administrator if these settings are unknown.

Server name: wermawin  
Instance name: wermawin  
Database: wermawin  
User name: wermawin  
Password: ●●●●●●

Search

Back Cancel      Next Ok

- Please select if you wish to have the "WERMA WIN 4 server service" installed on your desktop. Alternatively you can connect to an existing server service, giving the server name and TCP port. Confirm your selection with "Next".

WERMA-WIN database setup

**Expert installation**

Install the server service on this PC

The server service must be installed and activated once per database. We recommend installing the server service on the PC where the database is installed.

The server service uses the TCP Port 9710 as standard. If this port is already in use for a different network service please select an alternative TCP-Port

TCP-Port: 9710  
Check

Connect with the following server service

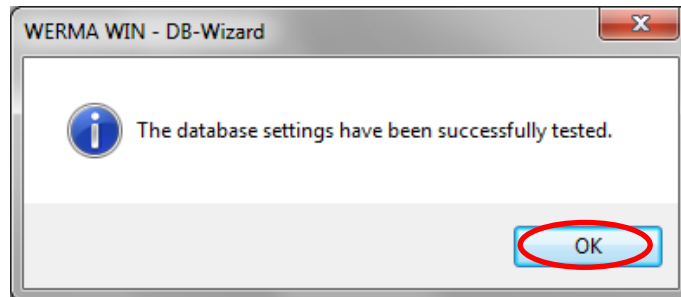
Server name:   
TCP-Port: 9710  
Check

Back Cancel      Next Ok

---

**Note:** A "WERMA WIN 4 Connector service" will also be installed. The service will run in the background as long as the PC is on. All collected WIN data is written to the WIN database without the WIN software running and a user logged on.

4. If the connection to the database is successful, the following window appears. Click "OK".

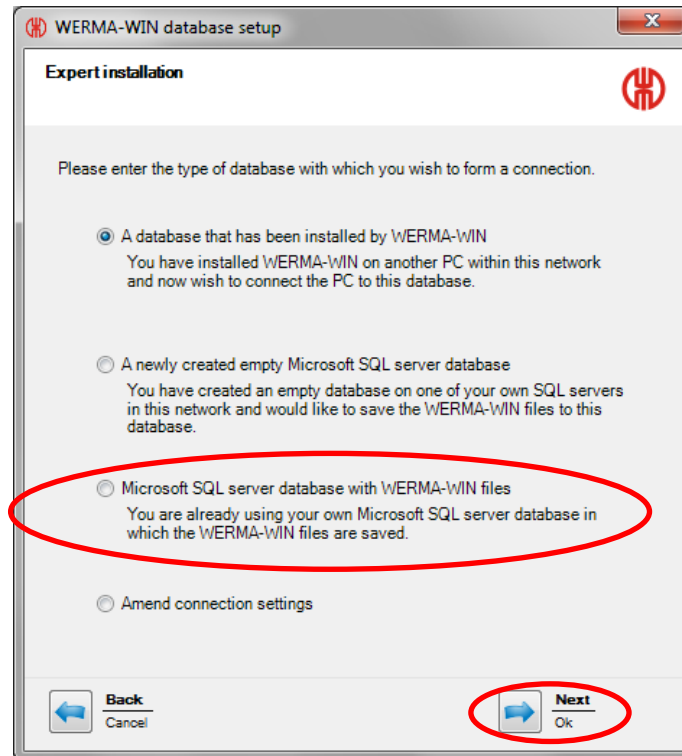


### 2.3.3 Microsoft SQL server database with WERMA-WIN files

By selecting this, you can connect to an existing WIN database, which is stored on an SQL server.

To connect to a WIN database, proceed as follows:

1. Select "Microsoft SQL server database with WERMA-WIN files" and click "Next."



- Specify the access data for this database.

WERMA-WIN database setup

**Expert installation**

Please enter the connection settings for the database server. Contact your network administrator if these settings are unknown.

Server name: wermawin

Instance name: wermawin

Database: wermawin

User name: wermawin

Password: ●●●●●●

Search

Back Cancel

Next Ok

- Please select if you wish to have the “WERMA WIN 4 server service” installed on your desktop. Alternatively you can connect to an existing server service, giving the server name and TCP port. Confirm your selection with “Next”.

WERMA-WIN database setup

**Expert installation**

Install the server service on this PC

The server service must be installed and activated once per database. We recommend installing the server service on the PC where the database is installed.

The server service uses the TCP Port 9710 as standard. If this port is already in use for a different network service please select an alternative TCP-Port

TCP-Port: 9710

Check

Connect with the following server service

Server name:

TCP-Port: 9710

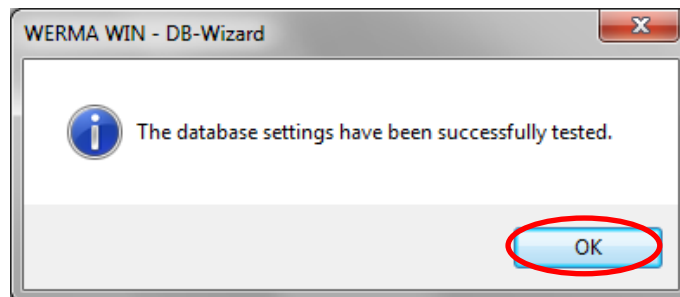
Check

Back Cancel

Next Ok

**Note:** A "WERMA WIN 4 Connector service" will also be installed. The service will run in the background as long as the PC is on. All collected WIN data is written to the WIN database without the WIN software running and a user logged on.

4. If the connection to the database is successful, the following window appears. Click "OK".

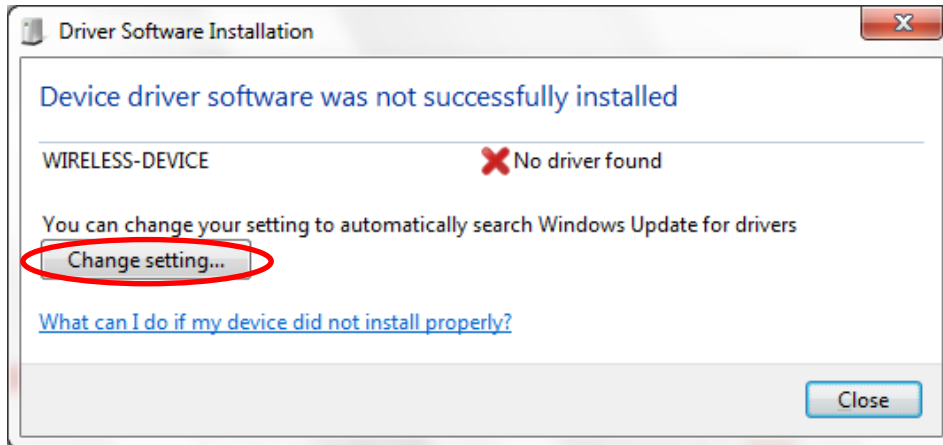


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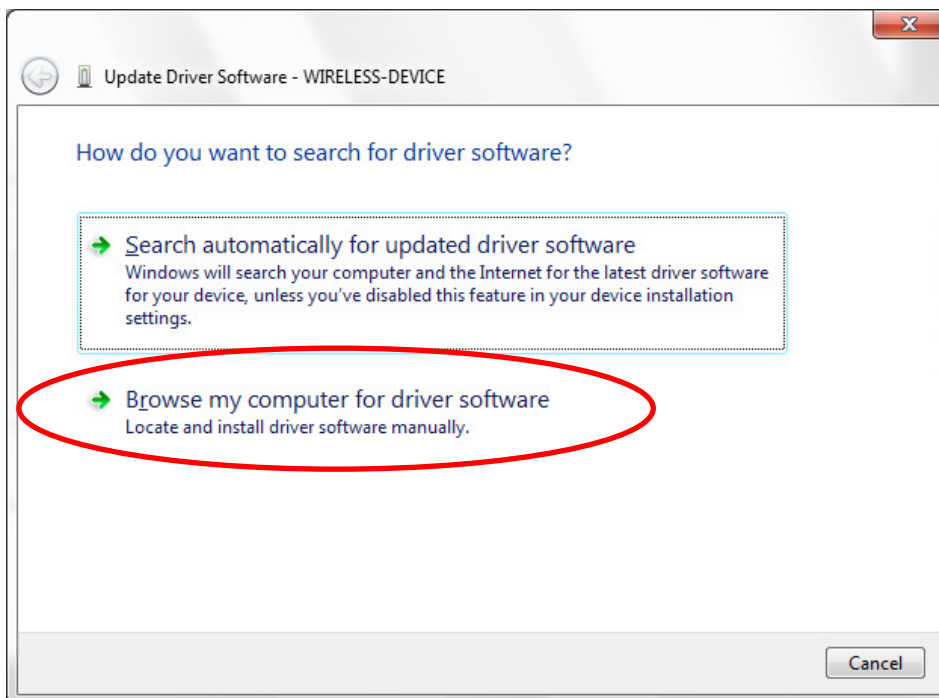
### 3. Manual driver installation

**Note:** Manual driver installation is only required if the WIN receiver is not recognized after installation of the WIN software. In this case, Windows will start the hardware wizard.

1. Click on "Change setting...".

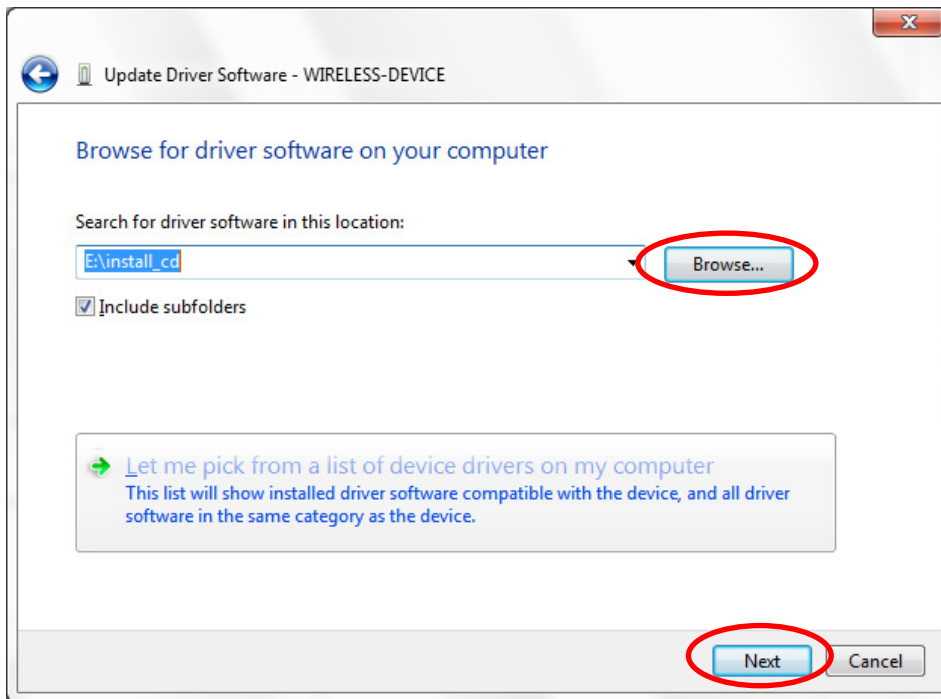


2. Please choose "Browse my computer for driver software".

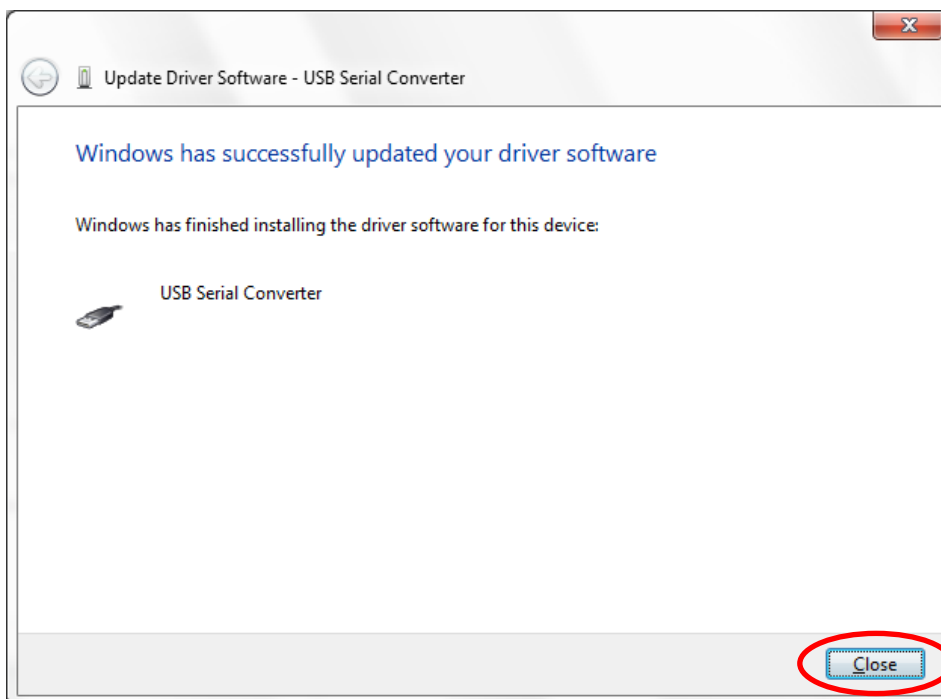




3. Insert the WIN software DVD into your CD-ROM drive. Specify the location of the WIN driver by clicking "Browse ...". Select the "Driver" folder in the CD-ROM drive and confirm by clicking "OK". Click "Next" again.



4. The driver for the WIN receiver has been successfully installed. Click "Finish" to close the hardware wizard.



**Note:** The WIN receiver is now ready for operation.

---

## 4. Mounting – WIN receiver

**Note:** The ideal wireless connection is achieved, if as few objects as possible are in between the WIN receiver and the WIN transmitter.

1. Fix the rubber feet or the wall bracket to the housing.
2. Screw the antenna on to your WIN receiver.



**Note:** The WIN receiver does not need a separate power supply, see chapter 1.6.4.